7-1-2003

Forage News [2003-07]

Department of Plant and Soil Sciences, University of Kentucky

UK COOPERATIVE EXTENSION SERVICE
University of Kentucky – College of Agriculture

LEXINGTON, KY 40546

Research & Education Center
Princeton, KY 42445

FORAGE NEWS

JULY 2003

Garry D. Lacefield, Extension Forage Specialist ● Christi Forsythe, Secretary

UK ALL COMMODITY FIELD DAY

The University of Kentucky's College of Agriculture will be hosting this year's "All Commodity Field Day" at the UK Robinson Station located in Quicksand, Kentucky on July 17, 2003. The day-long event begins with morning workshops in: Beef and Forage Production; Small Fruit Management; Athletic Turf Management; and Goat Production. A tour of the Robinson Forest will leave from the Robinson Station and return in time for the afternoon program that begins with registration at 2:00 p.m. The "Pride of the Mountains" Goat Show begins with weigh-in at 1:00 p.m. followed by showmanship classes starting at 2:00 p.m. Agronomy, Horticulture and Wood Utilization Center tours begin at 3:30 p.m. and conclude at 6:30 p.m. with dinner. For more information contact Dr. Terry Jones at 606-666-2438 Ext. 234 or visit our web site at www.ca.uky.edu/robinsonstation.

Beef and Forage Workshop - Sebastian Farms 10:00 a.m. - 2:30 p.m. Registration 9:00-9:30 a.m. at the UK Robinson Station (lunch provided)
Fruit Workshop - UK Robinson Station. 10:00 a.m. - 3:00 p.m. (lunch provided)
Goat Production Workshop - UK Robinson Station. 9:30 a.m. - 12:00 noon
Athletic Turf Workshop - UK Robinson Station. 12:45 - 5:00 p.m.
Robinson Forest Tour - 10:00 a.m. - 2:30 p.m. Register at the UK Robinson Station. (Transportation and lunch provided)
Pride of the Mountains Goat Show - Weigh-in: 1:00 - 2:00 p.m. Showmanship begins at 2:00 p.m.
Agri-Tourism in Kentucky - 12:00 noon - 2:30 p.m. Breathitt County Extension Office (lunch provided)
Agronomy, Horticulture and Wood Center Tours - 3:30 - 6:30 p.m. UK Robinson Station
Country Quilt Show - 2:00 - 8:00 p.m. UK Robinson Station Auditorium
Youth Activities - 11:00 a.m. - 3:00 p.m.
4-H Variety Show - 5:00 - 7:00 p.m.

INTENSIVE HAY CONDITIONING SYSTEMS

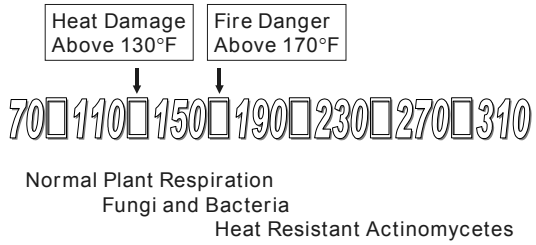
Within the last few years, there has been a new intensive conditioning system offered as a replacement for the conventional rolls on windrowers and mower-conditioners (Circle-C Equipment, Hermiston, OR 97838, 1-800-367-1847). This system has a set of non-intermeshing rubber rolls that operate at very small or virtually zero clearance. The intensive conditioning system also uses an air bag roll loading system that has the potential to produce higher roll force than conventional systems. The retail list price for this intensive roll conditioning system is about $15,000.

Producers have been anxious to know if this system actually provides sufficiently faster drying rate such that its substantial cost can be justified. Tests conducted by various researchers throughout the Midwest have found a roughly 10 to 15% increase in the drying rate compared to conventional conditioning. That translates to the crop achieving baling moisture 12 to 22 hours sooner than conventional practices.

Some of the drying advantage of the intensive conditioning system was lost when the roll clearance was maintained at the lower range of recommended levels. The typical roll clearance recommendations are 1/16 to 3/32 inches. However, on a number of producer machines the average roll clearance was about c inch, which is greater than the recommended values. Clearly, drying rate of the crop could be improved by simply maintaining the roll clearance at recommended levels, an improvement that would come at considerably lower cost than an intensive conditioning system.

A new intensive conditioner has been introduced that claims that it conditions the stem by Amacerating@ (AgLand Equipment, Arborg, Manitoba, Canada, 1-888-933-4440). The trail-behind pull-type machine has a set of intermeshing rubber rolls that feed a second set of serrated steel rolls. The serrated steel rolls operate at small clearance and differential speed. They are intended to nick and scratch the stem as a means of conditioning. The retail list of the machine will be $14,500. This system suffers from the requirement of a second pass through the field, decreasing productivity and increasing cost. (*SOURCE: Kevin Shinners, Univ. of Wisconsin in Pennsylvania Forage and Grassland News, Summer 2002*)

Heating and Spontaneous Combustion in Moist Hay



(SOURCE: *Dr. Mike Collins, University of Kentucky)*

SOUTH CENTRAL KENTUCKY AGRICULTURE FIELD DAY

The South Central Kentucky Agriculture Field Day will be held at the WKU Brown Exposition Center with registration beginning at 8:00 and tours begin at 9:00 on July 24. The field day is hosted by Western Kentucky University Department of Agriculture in cooperation with the University of Kentucky Cooperative Extension Service, the Kentucky Department of Agriculture and the Young and Adult Farmer Program.

Tours include: Forages, Grains, Beef, Dairy, Horticulture, and Horse. Other displays and activities include: Crop variety Trials, 4-H activities, Farm Safety Demonstration, Machinery displays, Family and Consumer Science displays and demonstrations, and several

information exhibits including USDA, FSA and NRCS along with many other exhibits in the open barn area.

Lunch will be available. For more information call 270-745-3151 or e-mail at Agriculture@wku.edu .

Fructans in Pasture Grasses and Implications for Equine Laminitis in Kentucky

Fructans are the primary storage carbohydrate of cool season grasses such as those used in Kentucky horse pastures. Fructan concentrations vary widely throughout the season reaching highs in the late fall and may approach 20% of total herbage dry matter in late October or early November. Fructans vary in length (number of fructose subunits) of fructose chains and degree of branching. All are readily soluble in water and do not exist in crystalline form or as granules similar to starch.

Amines, produced when large quantities of very digestible carbohydrate overload cecal fermentation capacity, have been implicated in acute laminitis. Most of this type of work has been done *in vivo* situations where fructans, such as inulin, have been incubated with equine cecal material.

Fructans are water soluble polymers of fructose are found in the vacuole and cytoplasm. After biting, mastication, and ingestion by the equine, the cell contents, including the fructans are released in the stomach and exposed to gastric enzymes and acids that release fructose and/or isomerizes fructose to glucose. One can assume that virtually all of the fructans are hydrolyzed in the stomach and hexoses adsorbed in the small intestine. Very little of the free fructose or short chain fructan, branched or not, are likely to enter the hind gut.

Equine generally prefer grasses that are high in sucrose. Grasses that are high in sucrose are those that are high in fructans. Diet selection of these grasses may be related to "sweetness". It would be an unusual evolutionary path for large herbivores that employ flight to evade predators to select grasses that would lead to a crippling disease that limits mobility.

Grasses with the highest concentrations of fructans (annual and perennial ryegrass and tall fescue) are minor components of Kentucky equine pastures and are not growing under conditions that favor high fructan loads. Thus, it is our opinion that fructans in Kentucky pastures are unlikely to cause laminitis in Kentucky equine. *(Dr. Chuck Dougherty, University of Kentucky)*

Hybrid and Protein Supplement Affect Gains of Cattle Grazing Mature Corn

Grazing standing, unharvested mature corn (*Zea mays* L.) eliminates the costs of combining, transporting, drying, storing, and marketing the grain and reduces dependence on expensive machinery. Additionally, letting cattle harvest the corn eliminates feedlot yardage expenses, manure hauling, and feed processing and handling. Plus, grazing reduces problems with livestock concentration often associated with feedlots.

Three corn hybrids/types (high grain, silage with softer kernels, and silage with more protein) were grazed by steers from 12 September through 5 December. Every day, steers received a fresh strip of corn plus 2.5 lbs of a supplement that contained Rumensin, vitamins, minerals, corn grain, and from .16 to 1.34 lbs of crude protein as soybean meal and urea.

Average daily gain (ADG) always exceeded 2 lbs/d; the maximum was 2.88 lbs/d from the high grain hybrid with .96 lbs protein/d. Overall, ADG increased as supplemental crude protein increased to .54 lbs daily but changed with thereafter. Corn hybrid had little effect on (ADG). Efficiency of converting corn grain into liveweight gain was low, between 8.0 and 14.4, partly due to grain passing undigested through the steers into their manure and to uneaten kernels remaining on the soil surface.

Hybrid selection may not affect ADG when mature corn is grazed but effect on gain/acre is unknown. Feeding each animal about .5 lb protein/d is desirable. *(SOURCE: Bruce Anderson, M.A. Trammell, and T.J. Klopfenstein, AFGC Proceedings, Vol. 11, July 2002, Bloomington, MN)*

Crop Options for an Expanding Dairy Farm in Wisconsin

Declining milk prices are reducing the profitability of Wisconsin dairy farms. To remain viable, many farms are expanding by adding more animals. With more animals, more forage must be produced to meet the nutrient needs of the herd. Adding more animals may also increase the nutrient load on the land increasing the potential for nutrient losses to the environment. Purchase or leasing of more cropland may be required to spread the additional nutrients over more land. Several cropping options are available to provide additional forage and feed to the herd. Better economic and environmental information on the tradeoffs among these options is needed to help farmers better plan the future of their operations. Long-term simulations of various cropping strategies on a representative dairy farm showed that adding pastureland with rotational grazing provided the greatest economic benefit to the farmer and the highest potential for reducing nitrogen leaching loss into ground water. Adding another silo and more corn, barley, or soybeans to the farm provided a little less economic benefit to the farmer with a small reduction in nitrogen leaching loss. These results illustrate that dairy farmers should consider adding rotationally grazed pasture as they expand or alter their land base and cropping strategy. *(SOURCE: C. Alan Rotz, et al., IN AFGC and 37th North American Alfalfa Improvement Conference Proceedings, July 2000)*

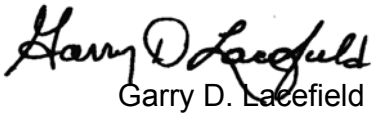
Kentucky Ranks in Top 20

I know when you saw the title above you first thought it was basketball and we are indeed very proud of Kentucky Basketball, and most are always aware of our National Ranking. We should also be very proud of Kentucky Agriculture and its National Ranking.

Crop	National Ranking	Livestock	National Ranking
Corn for grain	13	All cattle	13
Corn for silage	19	Beef cows	8
Winter wheat	16	Milk cows	18
All hay	9	Hogs & Pigs	20
Alfalfa hay	26	All Chickens	21
All other hay	3	Broilers	10
All Tobacco	2		
Tobacco, burley			
Soybeans	14		
Barley	21		
Sorghum	15		
SOURCE: Ky. Ag. Statistics 2001-2002. Leland E. Brown, State Statistician			

UPCOMING EVENTS

JUL 17	UK All Commodity Field Day, Robinson Station, Quicksand
JUL 24	South Central Kentucky Agriculture Field Day, Bowling Green
OCT 9-10	Kentucky Grazing School, Bourbon County Extension Office
NOV 25	Grazing Conference, Fayette County Extension Office, Lexington
2004	
JAN 9	Forages at KCA, Bowling Green
JAN 22	Heart of America Grazing Conference, Evansville, IN
FEB 26	24th Kentucky Alfalfa Conference, Cave City



Garry D. Lacefield
Extension Forage Specialist
July 2003